Stroke rehabilitation: Using interactive equipment, understanding physical therapy feedback's usefulness

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Background: Physical rehabilitation therapies are by necessity repetitive and as a consequence often boring for patients. Many Sydney based hospitals are set up with equipment such as pegs, wooden blocks and manual hand counters. While this equipment is useful for patients who are re-learning how to manipulate objects, it does not offer any immediate physical feedback about the patient's limb movements. From the human-computer interaction (HCI) perspective, feedback gives the user an understandable explanation that they are doing their exercises correctly or incorrectly through visual, audio or haptic signals. This research focuses on technology which gives patients these types of feedback, for example the Wii balance board which has been integrated into some Sydney hospitals.
Our team is creating equipment which gives multi-layered, relevant feedback to patients to aid with rehabilitation focusing on balance and gross motor skills.
Aims: Understanding what types of feedback are most useful for Stroke patients to enhance their rehabilitation tasks.

Methods: Semi-structured interviews with 18 patients who are undergoing rehabilitation in a hospital setting. Patients are asked about their experience with 6 different common exercises which are completed on a daily basis to help with balance. These include use of the Wii balance board as well as simple exercises such as throwing and catching a ball. Patients are asked to discuss the types of feedback they get from the exercises and identify their most liked and disliked exercises.

Results/Conclusion/Discussion: Qualitative results will be discussed including results of the most useful feedback types for Stroke patients.